Environmental Analysis
Bureau of Land Management
Las Vegas Field Office
Red Rock Canyon National Conservation Area
April 1, 2003

EA #: NV-050-03-09
Lease/Serial/Case File Number: 2003-197

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Need for the Proposed Action

Red Rock Canyon National Conservation Area receives over 1,000,000 visitors annually. The Calico Basin area lies within the NCA boundaries and provides an alternative to the 13 Mile Scenic Loop Drive. Over 20,000 people visit Calico Basin each year to hike, rock climb, horseback ride, picnic, bird watch or just relax in the beauty of Red Rock. With the expanding population in Las Vegas, and the close proximity of Calico Basin to Metropolitan Las Vegas, the visitation can only be expected to increase. This increase in public demand will result in an increase of detrimental impacts to sensitive species habitat, sensitive species, cultural sites and private property.

There is a need to develop a Management Plan for the Calico Basin area that focuses on environmentally and culturally sensitive areas, recreation and interpretive opportunities and parking issues.

1.2 Location of Proposed Action

T21S, R59E, Section 6, the NW ¼ of section 7 and T21S, R58E Section1; USGS Blue Diamond 15' and La Madre Mtn. 7.5' maps.

1.3 Conformance with Land Use Plan

The proposed action is in conformance with the Interim General Management Plan and the General Management Plan for Red Rock Canyon National Conservation Area, meeting the plan objectives of protecting natural resources and improving visitor services.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Alternative 1

No Action Alternative

Under the "No Action" alternative the BLM would not implement any changes in the way that the Calico Basin Area, Red Springs, Calico Springs or Ash Springs are managed.

2.2 Alternative 2

Proposed Action

1. Parking
   A. Construct a large (125 car) parking lot adjacent to the lower (northern most) portion of the Red Springs road (fig.1). This parking lot would be paved, painted and be bordered with a post and cable fence. This lot would be designed for horse trailer use.

Fig. 1

   B. Construct a small trailhead (Gene's Trail) parking lot on the north side of Calico Basin Drive. This parking lot would be a gravel lot with a post and cable fence. This lot would not be designed for horse trailer use.

   C. Close, remove and rehabilitate old parking areas (fig's 2, 3 & 4). This includes parking in and along the Red Springs area, Sandstone Road and Calico Drive.

Fig. 2

Fig. 3

Fig. 4

   D. Construct post and cable fencing around the new parking area.

2. Roadways
   A. Close, remove and rehabilitate Red Spring Road (fig. 5) from the new parking area to its southern most extension.

Fig. 5

   B. Pave public access into the new parking area off of Calico Basin Drive.

   C. Limit parking in Calico Basin on Sandstone Drive to local residents only.

3. Picnic sites
   A. Close, remove and rehabilitate existing picnic sites.

   B. Construct six new picnic sites outside of new fenced areas (Diagram 1).

4. Restrooms
   A. Construct two new handicap restrooms. One restroom will be located at the lower, NE corner of the parking area (Diagram 1) and the other will be located on the western portion of the perimeter trail (Diagram 1).
5. Fencing
   A. Remove the existing fence at Red Springs (Fig. 6 & 7).

Fig. 6

Fig 7

   B. Construct a larger post and pole fence at Red Springs incorporating the whole riparian area, spring source and alkaline meadow (Diagram 1). Install a water trough for burros outside of fenced area.

   C. Construct a post and pole fence at Calico Spring that incorporates the sensitive white bearpoppy. Leave the rest of the spring unfenced.

   D. Do not construct any fencing at Ash Spring.

E. Construct a post and cable fence along Sandstone drive (Fig's. 8 & 9) to keep out all Off Highway Vehicles (OHV's) from the area.

Fig. 8

Fig. 9

6. Trails/Recreation
   A. Construct an interpretive trail in Red Springs that incorporates cultural, biological and recreational areas of interest (Diagram 1).

      Cultural resources will be posted with signs that discuss appropriate visitor behavior at these sites and reference the State and Federal laws protecting archaeological resources on public lands. Interpretation of the sites will incorporate information from Native American tribes with ties to Calico Basin historically and traditionally.

      Biological resources will be posted with signs that inform the visitor about the sensitive species associated with Red Springs and its riparian area.

      Different types of recreational activities, along with any limitations or restrictions on those activities, will be posted on signs.

   B. Construct an interpretive boardwalk that is within the fenced in area at Red Springs. This trail will extend from the new parking area to the spring source. The boardwalk will be raised off of the ground, have handrails and be constructed with wood (Fig's 10 & 11). There will be interpretive signs throughout the boardwalk.

Fig. 10 (Death Valley, Salt Creek)

Fig. 11

   C. Tie the interpretive trail into other recreational trails in the area (Diagram 2)

D. Designate 6 recreational trails in the Calico Basin Area (Diagram 2). These trails will be open to hiking and equestrian use.

Kraft Mountain Trail
Girl Scout Trail
Ash Spring Trail
Calico Spring Trail
Overlook Trail (closed to horseback riding)
Gene's Trail

E. Recreational activities not recognized as acceptable uses in Calico Basin include off high-way vehicle use, mountain biking, hunting or target shooting.

7. Riparian area and alkaline meadow in Red Springs
   A. Redirect spring channel flow to its natural flow regime (Fig. 12). Removing the artificial burms at the spring source (Fig. 13) allowing the water to flow into its original channels (Fig. 14) will accomplish this. This redirection will be done in intervals to allow the riparian plants and aquatic invertebrates time to adjust to the change.

Fig. 12

Fig. 13

Fig. 14

   B. Aerate the soil, using a soil aerator, along the northwestern section of the alkaline meadow (area outside of current fence, formerly used as a soccer/frisbee field) to allow the revegetation and regrowth of endemic plant species (Fig. 15).

Fig. 15

   C. Backfill and contour removed road area with fill dirt from the excavated new parking area. If more fill dirt is needed, the soil used can be matched to the soils in Red Spring as close as possible.

8. Revegetation of impacted sites
   A. Seeds can be collected from the Red Springs area and sent to a nursery for germination.

   B. Plant plugs from the nursery and natural reseeding can be used to help revegetate appropriate areas.

2.3 Alternative 3

1. Parking
   A. Construct a 60 car parking lot adjacent to the lower (northern most) portion of the Red Springs road. This parking lot will be paved, painted and be bordered with a post and cable fence. This lot would be designed for horse trailer use.

      Construct a small trailhead parking lot on BLM land on the west side of Sandstone road (Fig. 16). This parking lot will serve as a Trailhead parking lot for climbers and hikers to the Northern portion of Calico Basin. The lot would be a gravel lot with a post and cable perimeter barrier. This lot would not be designed for horse trailers.

Fig. 16

      Construct a small trailhead (Gene's Trail) parking lot on the north side of Calico Basin Drive. This parking lot would be a gravel lot with a post and cable fence. This lot would be designed for horse trailer use.

   B. Close, remove and rehabilitate old parking areas. This includes parking in and along the Red Springs area, Sandstone Road and Calico Drive.

   C. Construct post and cable fencing around both new parking areas.

2. Roadways
   A. Close, remove and rehabilitate Red Spring Road from the new parking area to its southern most portion.

   B. Pave public access into the new parking areas off of Calico Basin Road and Sandstone Drive.

3. Picnic sites
   A. Close, remove and rehabilitate existing picnic sites.

   B. Construct 6 new picnic sites throughout the recreation area in Calico basin. (Diagram 1).

4. Restrooms
   A. Construct 4 new handicap restrooms. One restroom would be located at the lower, NE corner of the Red Spring parking area, one would be located on the western portion of the Red Spring perimeter trail, one would be located at the parking area on Sandstone Drive and the fourth would be located at the boulder field at the base of Calico Mountain (Diagram 3).
5. Fencing
   A. Remove the existing fence at Red Springs.

   B. Construct a larger post and pole fence at Red Springs incorporating the whole riparian area, spring source and alkaline meadow.

   C. Construct a post and pole fence at Calico Spring that incorporates the sensitive white bearpoppy. Leave the rest of the spring unfenced.

   D. Construct a post and pole fence around the lower portion of Ash Spring (outside of Herd Management Area).

   E. Construct a post and cable fence along Sandstone drive to keep out all Off Highway Vehicles from the area.

6. Trails/Recreation
   A. Construct an interpretive trail in Red Springs that incorporates cultural, biological and recreational areas of interest. Tie the interpretive trail into other recreational trails in the area.

   B. Construct an interpretive boardwalk that is within the fenced in area at Red Springs. This trail will extend from the new parking area to the spring source. The boardwalk will raised off of the ground, have handrails and be constructed with wood. There will be interpretive signs throughout the boardwalk

C. Designate 6 recreational trails in the Calico Basin Area (Diagram 2). These trails will be open to hiking and equestrian use.

Kraft Mountain Trail
Girl Scout Trail
Ash Spring Trail
Calico Spring Trail
Overlook Trail (closed to horseback riding)
Gene's Trail

D. Recreational activities not recognized as acceptable uses in Calico Basin include off high-way vehicle use, mountain biking, hunting or target shooting.

7. Riparian area and alkaline meadow in Red Springs
   A. Redirect spring channel flow to its natural flow regime. Remove the artificial burms at the spring source and allow the water to flow into its original channel. This redirection will be done in intervals to allow the riparian plants and aquatic invertebrates time to adjust to the change.

   B. Aerate the soil, using a soil aerator, along the northwestern section of the alkaline meadow (area outside of current fence, formerly used as a soccer/frisbee field) to allow the revegetation and regrowth of endemic plant species.

   C. Backfill and contour removed road area with fill dirt from the excavated new parking area. If more fill dirt is needed, the soil used can be matched to the soils in Red Spring as close as possible.

8. Revegetation of impacted sites
   A. Seeds can be collected from the Red Springs area and sent to a nursery for germination.

   B. Use plant plugs from nursery to replant all disturbed areas.

2.4 Alternative 4

1. Parking

   B. Close, remove and rehabilitate old parking areas. This includes parking in and along the Red Springs area, Sandstone Road and Calico Drive.

   C. Construct a parking area at the entrance to Calico Basin along HWY 159 (Fig. 17 & 18). The parking lot would be paved and accessible to horse trailers.


Fig 17


Fig. 18

9. Roadways
   A. Close, remove and rehabilitate all of Red Spring Road.

   B. Restrict parking in Calico Basin to local residents and official Government use.

10. Picnic sites
   A. Close, remove and rehabilitate existing picnic sites.

   B. Do not construct any new picnic sites.

11. Restrooms
   A. Remove all public restrooms from Calico Basin.

12. Fencing
   A. Remove the existing fence at Red Springs.

   B. Do not fence any springs in the Calico basin Area.

13. Interpretive trails and boardwalk
   A. Leave selected recreational trails as is.

   B. Do not construct any new trails in the calico Basin Area.

   C. Do not construct a boardwalk.

14. Riparian area and alkaline meadow in Red Springs
   A. Leave the spring flow channel in its current condition.
   B. Do not rip hardpan soil along the northwestern section of the alkaline meadow.

15. Revegetation of impacted sites
    A. Let impacted sites reseed themselves.

3.0 AFFECETED ENVIRONMENT

3.1 Alternatives 1-4

The proposed actions have been analyzed to assess direct, indirect, and cumulative impacts to critical elements of the environment listed below.

3.1.1 Physical Environment

Location of Proposed Action: Calico Basin
T21S, R59E, SW ¼ of section 6 and the NW ¼ of section 7; USGS Blue Diamond 15' and La Madre Mtn. 7.5' maps.

Land Ownership
Calico Basin is a mix of Public Lands managed by the Bureau of Land Management and privately held plots.

Air Quality
The project site and associated right-of-way are located within the Las Vegas Valley serious non-attainment area for both PM10 and CO. The primary responsibility of the BLM is to ensure any action we take within a non-attainment area does not lead to an exceedance of any established standards set and enforced by Clark County or the EPA.

The BLM will ensure all required permits will be processed through Clark County Department of Air Quality Management prior to any ground disturbing activity.

Mineral Development
There is no mineral development in the area.

Soils
Soils around Calico Spring and Ash Spring are categorized as *Cave loamy fine sand.* This shallow, well drained soil is on erosional fan remnants.
Typically, the surface layer is light brown loamy fine sand about 5 inches thick. The underlying material to a depth of 11 inches is pink gravelly fine sandy loam. The next layer to a depth of 60 inches or more is an indurated, lime-cemented hardpan. Depth to the hardpan ranges from 10 to 20 inches.
Included in this unit are small areas of Arizo soils, flooded, in channels. Included areas make up about 5% of the total acreage.
Permeability of the Cave soil is moderate above the hardpan. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is slow, and the hazard of water erosion is slight. The hazard of soil blowing is high (Soil Survey of Las Vegas Valley 1985, pg.17).

Soils in and around Red Spring are categorized as Rock outcrop-St. Thomas complex. This unit is 50% rock outcrop and 35% slopes. The rock outcrop is on ridges, crest and side slopes, and the St. Thomas soil is on side slopes of hills and low mountains. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included in this unit are about 5% Bracken soils on pediment remnants and 10% Weiser soils on erosional fan remnants. Included areas make up about 15% of total acreage.

The St. Thomas soil is shallow and well drained. It formed in residuum derived dominantly from limestone and dolomite. Typically, 90% of the surface is covered with a desert pavement of rock fragments. The surface layer is light yellowish brown extremely cobbly fine sandy loam about 7 inches thick. Bedrock is at a depth of about 7 inches. Depth to bedrock ranges from 4 to 20 inches.

Permeability of St. Thomas soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 4 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate. The hazard of soil blowing is slight.

Roads should be designed to minimize cuts because of the limited depth to bedrock. Cutting and filling can be reduced by building roads in the less sloping areas of the unit. Roads should be provided with adequate surface drainage. Erosion can be controlled and maintenance costs reduced by stabilizing areas that have been disturbed.

Visual Resources

The proposed project lies within VRM Class II, which is managed to retain the landscapes existing character. In these areas, authorized actions may not modify existing landscapes or attract the attention of the casual viewer.

3.1.2 Biological Environment

Wildlife:

Calico Basin is within the range habitat for bighorn sheep.

Common reptilian wildlife expected to occur within the project area include: the western whiptail (*Cnemidophorous tigris*), zebra-tail lizard (*Callisaurus draconoides*), side-blotched lizard (*Uta stansburiana*), long-nose leopard lizard (*Gambelia wislizenii*), Great Basin collard lizard (*Crotaphytus insularis bicinctores*), red coachwhip (*Masticophis flagellum piceus*), gopher snake (*Pituophis catenifer*), speckled rattlesnake (*Crotalus mitchelli*). Common avifauna to the project area include: black-throated sparrow (*Amphispiza belli*), black-tailed gnatcatcher (*Poiloptila nigriceps*), northern mockingbird (*Mimus polyglottos*), Common raven (*Corvus corax*), and red-tailed hawk (*Buto jamaicensis*). Other common wildlife include the Coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), Kit fox *(Vulpes macrotus*).

Sensitive Wildlife Species:

The only listed species that may occur within the project areas are the threatened desert tortoise (*Gopherus agazassii*) and the threatened phoenapepila bird. Other sensitive species that may occur within the project area are: the chuckwalla (*Sauromalus obesus*), the banded Gila monster (*Heloderma suspectum cinctum*), and the Spring Mountain spring snail (*Pyrgulopsis deaconi*).

Vegetation:

There are no threatened or endangered plant species found in Calico Basin. However, two special status species, alkali mariposa lily (*Calochortus striatus*) and white bearpoppy (*Arctomecon merriamii*) are found in this area.

The Mariposa Lily (***Calochortus striatus***) thrives in the alkaline soils of the Red Springs area (Fig. 19). The status of the alkali mariposa lily includes: USFWS Nevada species of concern; BLM Nevada sensitive species; Clark County MSHCP covered species; and is extremely rare in both Nevada and California. The population in Red Springs is the largest population found in Clark County. The Mariposa Lily's habitat in Red Springs is currently stable within the fenced in area, and almost denuded out of the fenced in area. Suitable habitat for the mariposa lily outside of the fenced area has been subject to grazing by burros and heavy recreational traffic from hikers and picnickers.

Fig. 19

The White Bearpoppy (***Arctomecon merriamii***) is a perennial plant found in flat desert scrub and Mojave Desert scrub habitats (Fig. 20). It prefers shallow gravelly soil, rocky slopes, and less often on valley bottoms. The white bearpoppy has been found on the banks of Calico Spring. The status of the white bearpoppy includes: USFWS species of concern; BLM Nevada special status species; Clark County MSHCP covered species. This plant is currently being impacted due to burro grazing and the recreational use surrounding Calico Spring.

Fig. 20

3.1.3 Social Environment

Casual Use Recreation

Calico Basin receives casual use from the greater Las Vegas area. Casual use includes picnicking, bouldering, rock climbing, hiking, photography, and viewing rock art. Private in-holdings of a residential nature occur within the Calico Basin area.

3.1.4 Cultural Environment

The Calico Basin area of Red Rock Canyon National Conservation Area (RRCNCA) is rich with the traces of prehistoric people. Water was readily available at Red Spring, Calico Spring, and Ash Creek, and several cultural groups utilized the area including the Anasazi, Patayan (Colorado River/Mohave), and Southern Paiutes. Petroglyph styles indicate a long tradition of visitors carving numerous designs into the colorful red rock escarpment.

No evidence has been found in Red Rock Canyon of any pithouse or surface structure suggesting native peoples probably made short trips to or through the area using rockshelters or brush structures as temporary housing. These people practiced a mobile lifestyle, traveling with the seasons in search of food. In the spring, agave was ready for harvest. The stalk was removed and the leaves trimmed, leaving an artichoke-like heart. The hearts were then roasted in large circular earth ovens. Several of these “roasting pits” are found in Calico Basin. The seeds of various grasses and shrubs ripened in late spring and early summer and the people processed the seeds by grinding them on flat rock surfaces with handheld stones or “manos.”

Large and small game such as deer, bighorn, rabbits, birds, rodents, reptiles and the desert tortoise were all caught and consumed and burnt bone has been recovered at rockshelters in the basin. Stone was worked—or flaked—to form dart and arrow points, knives, and other stone tools. Pottery fragments and fire-cracked rocks from cooking hearths still remain in Calico Basin providing information about the lifeways of prehistoric residents.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Alternative 1 (No Action)

4.1.1 Physical Environment

Air Quality

Under the No Action Alternative vehicles will continue to drive and park throughout the Calico Basin Area causing an increase of unhealthy dust particles in the air.

Environmental Justice

According to Executive Order 12898 of February 11, 1994, all Federal actions must address and identify as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low income populations in the United States.

Minerals

No impact to the geology or mineral development.

Visual resource

If the No Action Alternative is selected, trail braiding, burro damage, parking area expansion and vandalism may continue or increase.

4.1.2 Biological Environment

Wildlife

If the No Action Alternative is selected, crucial spring snail (*Pyrgulopsis deaconi*) habitat (unfenced area at spring source) will continue to be impacted by burros and recreational users. This increased use may have devastating impacts to the snail population.

Vegetation

If the No Action Alternative were selected, the potential alkaline meadow habitat of the mariposa lily (*Calochortus striatus*) that is currently unfenced would continue to be denuded. This use will continue to prevent the mariposa lily the ability to expand its population to its fullest extent.

4.1.3 Cultural Environment

Potential impacts to cultural resources in Calico Basin include but are not restricted to: direct and indirect damages to the rock art by climbing or scrambling on or near the panels; intentionally touching or accidentally brushing against the rock art; damage from foot traffic crossing the sites and the creation of makeshift trails; and vandalism to and/or removal of the resource including the collecting of artifacts or unauthorized excavations of rockshelters and campsites.

If the "No Action" alternative is selected, the public will remain uninformed about the fragility of archaeological sites. Interpretive signs educate people about the sensitivity of cultural resources. Failing to provide this information perpetuates a disregard for the resource, which results in cumulative impacts or even intentional damage.

4.1.4 Social Environment

Recreation

If the No Action Alternative were selected, recreation would not be impacted.

4.2 Alternative 2

4.2.1 Physical Environment

Air Quality

In general the impacts associated with air quality are anticipated to be minor, temporary and short term in nature. Increased emissions of PM10 will likely occur as a result of soil disturbance associated with vegetation removal, construction activities, and movement of construction equipment. However, the use of water during construction activities and subsequent application of acceptable soil stabilizing techniques will reduce the potential emissions. A localized increase in emissions of CO will also likely occur from construction equipment utilized during construction. Anticipated PM10 and CO emissions associated with the right-of-way are provided below.

Total PM10 (tons) for the proposed action = (number of acres constructed upon per month) x 0.265 x total number of months of construction.
1 acre x 0.265 x 3months of construction = 0.795

Environmental Justice

According to Executive Order 12898 of February 11, 1994, all Federal actions must address and identify as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low income populations in the United States.

Minerals

There are no mining claims in the project site. Minerals activities are not permitted in the area.

Visual resource

Improvement of picnic sites, a single paved parking area, trails and interpretive signs, all would contribute to improving the aesthetic value of the area and aid in restoring the area into a natural condition.

4.2.2 Biological Environment

Wildlife

Potential impacts to wildlife include disruption due to human presence and heavy machinery during the time period of actual construction. There may be potential impacts to the spring snail population from the redirecting of the spring flow channel. This impact can be kept to a minimum by transplanting portions of the population as well as redirecting the spring in stages. Burros may be impacted by the elimination of grazing within the expanded enclosure and the reduction of water availability to a water trough outside of enclosure. This alternative still allows burros access to water at Calico Spring (approximately 1/3 mile away) and Ash Spring (approximately 1 and ½ miles away). Any other potential impacts would be minimized by adherence to tortoise guidelines.

Vegetation

Potential impacts to vegetation would be kept to a minimum in areas deemed sensitive. There may be potential impacts to sensitive plant populations from the redirecting of the spring flow channel. This impact can be kept to a minimum by transplanting portions of the population, seed collection and redirecting the spring in staggered stages. The proposed parking area would be thoroughly surveyed and if any sensitive plants were found they would be transplanted to an area that would not be disturbed.

4.2.3 Cultural Environment

Potential impacts to cultural resources in Calico Basin include but are not restricted to: direct and indirect damages to the rock art by climbing or scrambling on or near the panels; intentionally touching or accidentally brushing against the rock art; damage from foot traffic crossing the sites and the creation of makeshift trails; and vandalism to and/or removal of the resource including the collecting of artifacts or unauthorized excavations of rockshelters and campsites.

If Alternative 2 is selected, potential impacts may increase due to the establishment of an interpretive trail at Red Springs. This trail will guide visitors to a selected number of cultural resource sites that may not have been visited if a trail did not exist, however, the installation of interpretive signs will educate the public about the sensitive and fragile nature of the resource. The construction of the trail itself should not have any direct impacts to archaeological sites.

4.2.4 Social Environment

Recreation

Some forms of recreation may be suspended while the Red Springs area undergoes restoration. Upon completion of the project, those forms of recreation would re-open if they were still in conformance with the overall scheme of the area. Recreational opportunities include: hiking, rock climbing, horseback riding, picnicking and viewing of rock art.

4.3 Alternative 3

4.3.1 Physical Environment

Air Quality

In general the impacts associated with air quality are anticipated to be minor, temporary and short term in nature. Increased emissions of PM10 will likely occur as a result of soil disturbance associated with vegetation removal, construction activities, and movement of construction equipment. However, the use of water during construction activities and subsequent application of acceptable soil stabilizing techniques will reduce the potential emissions. A localized increase in emissions of CO will also likely occur from construction equipment utilized during construction. Anticipated PM10 and CO emissions associated with the right-of-way are provided below.

Total PM10 (tons) for the proposed action = (number of acres constructed upon per month) x 0.265 x total number of months of construction.
1 acre x 0.265 x 3months of construction = 0.795

Environmental Justice

According to Executive Order 12898 of February 11, 1994, all Federal actions must address and identify as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low income populations in the United States.

Minerals

There are no mining claims in the project site. Minerals activities are not permitted in the area.

Visual resource

Improvement of picnic sites, improved parking, improved trails and interpretive signs would improve the aesthetic value of the area and aid in restoring the area into a natural condition.

4.3.2 Biological Environment

Wildlife

Potential impacts to wildlife would include disruption due to human presence and heavy machinery during the time period of actual construction. There may be potential impacts to the spring snail population from the redirecting of the spring flow channel. This impact can be kept to a minimum by transplanting portions of the population as well as redirecting the spring in stages. Burros may be impacted due to the fence enclosure and elimination of access to water at Red Springs. This alternative still allows burros access to water at Calico Spring (approximately 1/3 mile away) and Ash Spring (approximately 1 and ½ miles away). Any other potential impacts would be minimized by adherence to tortoise guidelines.

Vegetation

Potential impacts to vegetation would be kept to a minimum in areas deemed sensitive. There may be potential impacts to sensitive plant populations from the redirecting of the spring flow channel. This impact can be kept to a minimum by transplanting portions of the population, seed collection and redirecting the spring in staggered stages. The proposed parking areas would be thoroughly surveyed and if any sensitive plants were found they would be transplanted to an area that would not be disturbed.

4.3.3 Cultural Environment

Potential impacts to cultural resources in Calico Basin include but are not restricted to: direct and indirect damages to the rock art by climbing or scrambling on or near the panels; intentionally touching or accidentally brushing against the rock art; damage from foot traffic crossing the sites and the creation of makeshift trails; and vandalism to and/or removal of the resource including the collecting of artifacts or unauthorized excavations of rockshelters and campsites.

If Alternative 3 is selected, potential impacts may increase due to the establishment of several interpretive trails in Calico Basin. These trails will guide visitors and provide access to many of the cultural resource sites that may not have been visited if the trails did not exist. The installation of interpretive signs plays a crucial role in educating the public about the sensitive and fragile nature of archaeological resources. Actual construction of the trails should not have any direct impacts to the sites.

4.3.4 Social Environment

Recreation

Some forms of recreation may be suspended while the Red Springs area undergoes restoration. Upon completion of the project, those forms of recreation would re-open if they were still in conformance with the overall scheme of the area. Recreational opportunities include: hiking, rock climbing, horseback riding, picnicking and viewing of rock art.

4.4 Alternative 4

4.4.1 Physical Environment

Air Quality

In general the impacts associated with air quality are anticipated to be minor, temporary and short term in nature. Increased emissions of PM10 will likely occur as a result of soil disturbance associated with vegetation removal, construction activities, and movement of construction equipment. However, the use of water during construction activities and subsequent application of acceptable soil

stabilizing techniques will reduce the potential emissions. A localized increase in emissions of CO will also likely occur from construction equipment utilized during construction. Anticipated PM10 and CO emissions associated with the right-of-way are provided below.

Total PM10 (tons) for Alternative 4 = (number of acres constructed upon per month) x 0.265 x total number of months of construction.
1 acre x 0.265 x 1months of construction = 0..265

Minerals

There are no mining claims in the project site. Minerals activities are not permitted in the area.

Visual resource

If Alternative 4 were selected all man made structures in the Red Springs area would be removed. An in-depth restoration plan would have to be implemented to restore area back to its natural state.

4.4.2 Biological Environment

Wildlife

Potential impacts to wildlife include disruption due to human presence and heavy machinery during the time period of actual demolition. Burros would have complete access to all springs in the Calico Basin Area. There would be no protection of the sensitive spring snail species (*Pyrgulopsis deaconi*) from recreation or burros. Any other potential impacts would be minimized by adherence to tortoise guidelines.

Vegetation

Potential impacts to vegetation would be kept to a minimum in areas deemed sensitive. There would be no protection of sensitive plant species (*Calochortus striatus, Arctomecon merriamii)* at Red Spring or Calico Spring.

4.4.3 Cultural Environment

Potential impacts to cultural resources in Calico Basin include but are not restricted to: direct and indirect damages to the rock art by climbing or scrambling on or near the panels; intentionally touching or accidentally brushing against the rock art; damage from foot traffic crossing the sites and the creation of makeshift trails; and vandalism to and/or removal of the resource including the collecting of artifacts or unauthorized excavations of rockshelters and campsites.

If Alternative 4 is selected, no trails will be constructed or interpretive signs installed. The public will remain uninformed about the fragility of archaeological sites. Interpretive signs educate people about the sensitivity of cultural resources. Failing to provide this information perpetuates a disregard for the resource, which results in cumulative impacts or even intentional damage.

4.4.4 Social Environment

Recreation

Some forms of recreation may be suspended while the Red Springs area undergoes restoration. Upon completion of the project, those forms of recreation would re-open if they were still in conformance with the overall scheme of the area. Recreational opportunities include: hiking, rock climbing, horseback riding, picnicking and viewing of rock art. Access to all recreation areas would be from the parking area on HWY 160 via an access trail.

4.5.1 Critical Elements Alternative 1

Direct/Indirect/ Cumulative	No Affect	Value	Rationale
	X	Air Quality	Air quality would not be affected.
	X	ACECs	Calico Basin is not within an ACEC.
X		Cultural Resources	Cultural resources would receive no interpretation possibly perpetuating cumulative impacts and intentional damage.
	X	Environmental Justice	Visitation to picnic sites would not be affected
	X	Farmlands, Prime/Unique	No prime or unique farmlands are present within the proposed location.
	X	Floodplains	No floodplains are present within the proposed event location.
	X	Native American Concerns	Consultation with Native Americans will identify and address any concerns.
	X	Paleontological Resources	There will be no affect to paleontological resources.
X		Riparian Resources	The riparian area would remain as is. Potential *Calochortus* habitat would be lost. *Pyrgulopsis* habitat would continue to be degraded.
	X	T&E Species	The proposed project will not likely have an adverse effect on the desert tortoise.
	X	Migratory Birds	The project is not within the migratory bird breeding areas.
	X	Wastes, Hazardous/Solid	No known hazardous or solid wastes are present in the area. All petroleum products would be cleaned up and properly disposed of.
	X	Water Quality	Water quality would remain the same.
	X	Weeds, noxious	There are no known noxious weeds in the area of the project.
	X	Wilderness	The proposed action does not occur within any Wilderness Areas or WSA's.

4.5.2 Critical Elements Alternative 2

Direct/Indirect/ Cumulative	No Affect	Value	Rationale
X		Air Quality	PM10 of .795
	X	ACECs	Calico Basin is not within an ACEC.
X		Cultural Resources	Cultural resources would receive increased visitation due to the construction of an interpretive trail.
	X	Environmental Justice	There are no known minorities or low-income groups in the area that would be affected by the proposal. Picnic areas will not be removed, just moved.
	X	Farmlands, Prime/Unique	No prime or unique farmlands are present within the proposed location.
	X	Floodplains	No floodplains are present within the proposed event location.
	X	Native American Concerns	Consultation with Native Americans will identify and address any concerns.
	X	Paleontological Resources	There will be no affect to paleontological resources.
X		Riparian Resources	The riparian area would be restored to a more natural state.
X		T&E Species	The proposed project will not likely have an adverse effect on the desert tortoise.
	X	Migratory Birds	The project is not within the migratory bird breeding areas.
	X	Wastes, Hazardous/Solid	No known hazardous or solid wastes are present in the area. All petroleum products would be cleaned up and properly disposed of.
X		Water Quality	Water quality might gain a heavier silt load during construction but should return to normal.
	X	Weeds, noxious	There are no known noxious weeds in the area of the project.
	X	Wilderness	The proposed action does not occur within any Wilderness Areas or WSA's.

4.5.3 Critical Elements Alternative 3

Direct/Indirect/ Cumulative	No Affect	Value	Rationale
X		Air Quality	PM10 of .795.
	X	ACECs	Calico Basin is not within an ACEC.
X		Cultural Resources	Cultural resources would receive increased visitation due to the construction of an interpretive trail.
	X	Environmental Justice	There are no known minorities or low-income groups in the area that would be affected by the proposal.
	X	Farmlands, Prime/Unique	No prime or unique farmlands are present within the proposed location.
	X	Floodplains	No floodplains are present within the proposed event location.
	X	Native American Concerns	Consultation with Native Americans will identify and address any concerns.
	X	Paleontological Resources	There will be no affect to paleontological resources.
X		Riparian Resources	The riparian area will be restored to a more natural state.
X		T&E Species	The proposed project will not likely have an adverse effect on the desert tortoise.
	X	Migratory Birds	The project is not within the migratory bird breeding areas.
	X	Wastes, Hazardous/Solid	No known hazardous or solid wastes are present in the area. All petroleum products would be cleaned up and properly disposed of.
X		Water Quality	Water quality might gain a heavier silt load during construction but should return to normal.
	X	Weeds, noxious	There are no known noxious weeds in the area of the project.
	X	Wilderness	The proposed action does not occur within any Wilderness Areas or WSA's.

4.5.4 Critical Elements Alternative 4

Direct/Indirect/ Cumulative	No Affect	Value	Rationale
X		Air Quality	PM10 of .265
	X	ACECs	Calico Basin is not within an ACEC.
X		Cultural Resources	Cultural resources would receive no interpretation possibly perpetuating cumulative impacts and intentional damage; however, visitation may decrease due to limited access into Calico Basin.
X		Environmental Justice	Minority and low-income groups typically use the picnic sites for recreation. These groups would be affected by the lack of picnic sites.
	X	Farmlands, Prime/Unique	No prime or unique farmlands are present within the proposed location.
	X	Floodplains	No floodplains are present within the proposed event location.
	X	Native American Concerns	Consultation with Native Americans will identify and address any concerns.
	X	Paleontological Resources	There will be no affect to paleontological resources.
X		Riparian Resources	All riparian areas would not have any form of protection.
	X	T&E Species	The proposed project will not likely have an adverse effect on the desert tortoise.
	X	Migratory Birds	The project is not within the migratory bird breeding areas.
	X	Wastes, Hazardous/Solid	No known hazardous or solid wastes are present in the area. All petroleum products would be cleaned up and properly disposed of.
X		Water Quality	Water quality would be affected by burros and recreational users having access to them.
	X	Weeds, noxious	There are no known noxious weeds in the area of the project.
	X	Wilderness	The proposed action does not occur within any Wilderness Areas or WSA's.

4.6 Cumulative Impacts

4.6.1 Alternative 1 (No Action)

Cultural resources would receive no interpretation possibly perpetuating cumulative impacts and intentional damage.

4.6.2 Alternative 2 (Proposed Action)

Calico Basin is a popular area for rock climbing as well as other types of recreational activities including picnicking, hiking, horseback riding and viewing rock art. The proposed action could generate additional interest in the Calico Basin area, which could contribute to greater impact to the unprotected areas as well as impact to local resident properties. These factors could increase the potential for conflicts between the recreational users and local residents.

The spring source at Red Spring would be fenced thereby reducing impacts to the spring snail population.

Crucial alkaline meadow habitat would be fenced thereby allowing the population of mariposa lily to increase in size.

The small population of white bear poppy at calico Spring would be fenced thereby allowing there population to stabilize and possibly increase in size.

Burros would be restricted to a water trough below Red Springs. This action might cause an increase in burro use at Calico Spring and Ash Spring, thereby causing an increased impact to these springs.

Providing interpretation at cultural sites may cause visitation to increase resulting in greater impacts to the resource. As the number of visitors grows, the potential for acts of vandalism may also rise.

4.6.3 Alternative 3

Calico Basin is a popular area for rock climbing as well as other types of recreational activities including picnicking, hiking, horseback riding and viewing rock art. The proposed action could generate additional interest in the Calico Basin area, which could contribute to greater impact to the unprotected areas as well as impact to local resident properties. These factors could increase the potential for conflicts between the recreational users and local residents.

The spring source at Red Spring would be fenced thereby reducing impacts to the spring snail population.

Crucial alkaline meadow habitat at Red Spring would be fenced thereby allowing the population of mariposa lily to increase in size.

The small population of white bear poppy at calico Spring would be fenced thereby allowing there population to stabilize and possibly increase in size.

Burros would be fenced out of their historic watering area at Red Springs and would have to use Calico Spring and Ash Spring as their water source. This may cause greater burro impact to both springs and their associated riparian areas.

Providing interpretation at cultural sites may cause visitation to increase resulting in greater impacts to the resource. As the number of visitors grows, the potential for acts of vandalism may also rise.

4.6.4 Alternative 4

Calico Basin is a historically popular area for rock climbing as well as other types of recreational activities. These activities include picnicking, hiking, horseback riding and viewing rock art. Alternative 4 would limit access to popular recreation areas to foot traffic. These limitations could possibly lead to a reduction of interest in the Calico Basin area, which could contribute to a decline in visitation to the area.

Burros would have access to all springs in the Calico Basin area. This unlimited access would impact the riparian habitats through the act of burro trampling and excretion. This increased habitat destruction would directly effect the viability of associated sensitive species.

Alternative 4 would limit the amount of authorized vehicle parking in Calico Basin. These limitations may have an adverse effect and increase the amount of un-authorized or off road vehicle use to the area.

Cultural resources would receive no interpretation possibly perpetuating cumulative impacts and intentional damage; however, visitation may decrease due to limited access into Calico basin.

4.7.1 Mitigating Measures

4.7.1 Alternative 1 (No Action Alternative)

No mitigating measures would be necessary.

4.7.2 Alternative 2 (Proposed Alternative)

Heavy equipment would be required to remove the road and picnic areas in Red Springs as well as the building of new picnic sites and parking lot. A bobcat would be used to install post and cable fencing around parking lot and Sandstone Drive. Heavy equipment might be used to restore the Red Springs meadow and riparian area to a more natural state. Construction crews would be familiarized with T/E and sensitive species prior to construction and advised to proper action if such species are encountered.

1. The area for the new parking and the interpretive trail and boardwalk would be inventoried for T&E and category 1 & 2 candidate plant species prior to construction to ensure that the plants would not be impacted and could be avoided during construction.
2. Any Gila Monsters encountered during construction will be avoided. Gila Monsters are protected under Nevada Administrative Code 508.080. BLM wildlife staff or NDOW would be provided with date, location, etc., of any Gila Monsters sighted.
3. While working at the spring source of Red Spring, great care would be taken to not disturb the Spring Mountain spring snail. If the spring snail habitat needed to be disturbed, snails would be collected and released after disturbance was over. Dr. Don Sada would act as a Spring Snail Specialist if spring snail habitats needed to be disturbed.
4. A Class III inventory for cultural resources would be required in the Area of Potential Effect (APE) to identify any historic properties and avoid and/or mitigate any effects to those properties.
5. Ash Springs would not be fenced so burros would have access to water.

4.7.3 Alternative 3

Heavy equipment would be required to remove the road and picnic areas in Red Springs as well as the building of new picnic sites and parking lots. A bobcat would be used to install post and cable fencing around parking lots and Sandstone Drive. Heavy equipment might be used to restore the Red Springs meadow and riparian area to a more natural state. Construction crews would be familiarized with T/E and sensitive species prior to construction and advised to proper action if such species are encountered.

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2. Any Gila Monsters encountered during construction would be avoided. Gila Monsters are protected under Nevada Administrative Code 508.080. BLM wildlife staff or NDOW will be provided with date, location, etc., of any Gila Monsters sighted.
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4. A Class III inventory for cultural resources would be required in the Area of Potential Effect (APE) to identify any historic properties and avoid and/or mitigate any effects to those properties.
5. Ash Springs would not be fenced, so burros could have access to water.

4.7.4 Alternative 4

Heavy equipment would be required to remove the road and picnic areas in Red Springs. Construction crews would be familiarized with T/E and sensitive species prior to demolition and advised to proper action if such species are encountered.

1. Any Gila Monsters encountered during construction would be avoided. Gila Monsters are protected under Nevada Administrative Code 508.080. BLM wildlife staff or NDOW will be provided with date, location, etc., of any Gila Monsters sighted.
2. While working at the spring source of Red Spring, great care would be taken to not disturb the Spring Mountain spring snail. If the spring snail habitat needed to be disturbed, snails would be collected and released after disturbance was over. Dr. Don Sada would act as a Spring Snail Specialist if spring snail habitats needed to be disturbed.
3. A Class III inventory for cultural resources would be required in the Area of Potential Effect (APE) to identify any historic properties and avoid and/or mitigate any effects to those properties.

5.0 PREPARER

Patrick Putnam, Natural Resource Specialist

6.0 CONSULTANTS

Bureau of Land management Staff

Gayle Marrs-Smith	Botanist	LVFO
Stan Rolf	Archaeologist	LVFO
Susan Rowe	Archaeologist	LVFO
Gary McFadden	Wild Horse and Burro Specialist	LVFO
Amy Torres	Wild Horse and Burro Specialist	LVFO
Christina Murphy	Wildlife Biologist	LVFO
Debbie Wright	Outdoor Recreation Planner	LVFO
Sarah Sutherland	Outdoor Recreation Planner	LVFO
Patrick Putnam	Natural Resource Specialist	LVFO
Patt Flemming	Civil Engineer	Denver FO
Mark Pritchett	Landscape Architect	Denver FO

DECISION RECORD

EA-NV-050-03-09

DECISION:
It is my decision to implement all management actions identified in the attached EA.

FINDING OF NO SIGNIFICANT IMPACTS: I have determined that the proposed action will not have any significant impacts on the human environment and that a EIS is not required. I have determined that the proposed project is in conformance with the approved land use plan.

RATIONALE: The proposed action is in conformance with the applicable land use plan, the Red Rock Canyon NCA Interim General Management Plan that was approved June 1, 1995 and does not constitute an irreversible or irretrievable commitment of resources.

Prepared by: _____ _____
Patrick Putnam Date
Natural Resource Specialist

Approved by: _____ _____
Timothy P. O'Brien Date
Manager, Red Rock Canyon NCA
Las Vegas Field Office

APPENDIX A

Comments on Issues 1-7 from Public Meeting November 13 2002

<u>Issue 1:</u> **<u>Protection of Sensitive Species –</u> What measures should be taken to promote biodiversity and protect rare endemics and species of concern?**

A. Sensitive species need some form of protection:
100%
Sensitive species are fine the way they are:
0%

B. Protect sensitive species using means other than fencing:
0%
Protect sensitive species by fencing out recreational users as well as burros:
20%
Protect sensitive species by fencing out recreational use alone:
80%
NO extra effort is necessary to protect sensitive species:

Issue 2: **Restoration of Red Spring Riparian Area- What measures should be taken to restore Red Springs to its maximum habitat potential while still providing interpretation and recreation for the visitors.**

A. Fence line should be expanded to include all of the riparian area:
50%
The fence should be removed and Red Springs should not be fenced:
40%
The fence should be left alone
10%

B. Post and pole fencing should be used to fence Red Springs:
20%
The fence should be constructed with materials other than post and pole:
0%
No comment:
80%

C. The Red Springs road should be removed from Red Springs:
80%
The Red Springs road should remain:
10%
No comment:
10%

D. Picnic areas should be removed and NOT reconstructed elsewhere:
80%
Picnic areas should be removed and reconstructed elsewhere
10%
Picnic areas should remain as they are:
0%
No comment:
10%

E. The current parking areas should be removed and rehabilitated. No new parking areas should be built:
10%
The current parking areas should be removed and rehabilitated. A new parking area should be established:
90%
Leave the parking areas as they are:
0%

F. One new parking area should be created at the entrance to Calico basin:
20%
One new parking area should be created on Calico Basin Road:
10%
One new parking area should be created at the bottom of Red Springs:
60%
One new parking area should be created on Sandstone road:
10%
One new parking area should be created at Ash Springs:
0%

G. Parking areas should be paved:
20%
Parking areas should be gravel:
0%
Parking areas should be dirt:
10%
No comment:
70%

H. More restrooms are needed at Red Springs:
10%
There are a sufficient number of restrooms at Red Springs:
10%
No comment:
80%

I. Establish an interpretive trail and boardwalk in the Red Springs area:
80%
No new trails are needed in Red Springs:
20%
All trails should be eliminated from Red Springs:
0%

Issue 3: **Protection of Calico Spring- What measures should be taken to protect Calico Spring from burro and recreation impacts.**

A. Establish a fence that protects all of Calico Spring from recreational use and burro traffic:
0%
Establish a fence that protects only the sensitive portions of Calico Spring:
70%
Leave Calico Spring as it is:
30%

B. Construct a trail that provides interpretation at Calico Spring:
60%
Do not construct a trail that goes by Calico Spring:
40%

Issue 4: **Protection of Ash Spring- What protection should be taken given to Ash Spring in regards to recreation impacts.**

A. Establish a fence that protects all of Ash Spring from recreational use and burro traffic:
10%
Establish a fence that protects Ash Spring from off road use:
90%
Leave Ash Spring as it is:
0%

C. Construct a trail that provides interpretation at Ash Spring
60%
Do not construct any new trails in Ash Spring:
40%

D. Construct a post and cable fence along Sandstone Drive to keep OHV users out of Ash Spring:
40%
Use means other than post and cable to keep OHV users out of Ash Spring:

No comment:
60%

Issue 5: **Wild Horse and Burro Management- How should burros be managed in Calico Basin and what water sources should be available for the burros.**

A. Burros should be restricted access to all springs in Calico Basin:
0%
Burros should have access to all springs in Calico Basin:
40%
Burros should have access to Ash Springs, but no others:
40%
Burros should have access to Calico Springs and Ash Springs but not to Red Springs:
20%

B. Burros should be removed from Calico Basin:
10%
Burros should be left alone:
60%
There should be occasional burro gathers to help limit population size:
30%

C. If a spring is fenced, water should be diverted to a trough to create a water source for burros:
30%
Water should not be diverted from fenced springs:
0%
No comment:
70%

Issue 6: **Recreational Uses-What kinds of recreational opportunities should be offered to visitors? What measures should be taken to provide for those recreational opportunities, while limiting impacts to sensitive areas. What measures should be taken to ensure adequate parking with the least impact on the riparian area and the residence of Calico basin.**

A. Parking issues are addressed above.

B. Recreation opportunities should be encouraged:
100%
Recreation should be eliminated:
0%

C. Recreational user trails should be constructed to help reduce the amount of trail braiding:
80%
No new trails should be constructed:
20%

D. Acceptable types of recreation should be:

Rock climbing	
Horseback riding	
Hiking	
Picnicking	
Cultural viewing	
Park type sports (soccer etc.)	**0%**
Camping	**0%**
Bike riding	**0%**

Issue 7: **Cultural Resources-How should cultural and paleontological resources be managed. What measures should be taken to provide interpretation and viewing of these cultural resources.**

A. Construct an interpretive trail with signs to all cultural sites:
0%
Construct an interpretive trail with signs to some cultural sites:
60%
Do not construct interpretive trails to cultural sites:
10%
No comment:
30%

B. Construct barriers (i.e. fencing) at cultural sites:
10%
Leave cultural sites as is:
0%
No comment:
90%

Additional Comments

A. Make Calico Basin a fee area:

B. Make Red Spring a fee area:

C. Need more law enforcement or Park Ranger presence:

D. Need more trash cans